

India-Iran Trade Integration: Rising Trade Deficit of India and Way Forward

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Abstract: Liberalization around the world from last couple of decades has led to increase in trade between different countries. Many factors like common language, culture, tradition and comparative advantage have contributed to rapid growth of trade around the World. Like other countries India and Iran have taken many steps to improve their bilateral trade. The rapid growth and increased energy demand in India and Iran's attempt to improve trade relations with neighbouring countries have led to enhanced trade between these countries. The increased trade volume can be contributed to imports to Iran than exports from India which has led to huge trade deficit of latter. The present study attempts to analyze comparative advantage of India so that in long run trade deficit can be minimized if not eliminated completely. The trade according to comparative advantage can lead to efficient utilization of resources and economic growth over the period of time.

Keywords: Trade relations, Trade composition, Necular program, Comparative advantage

INTRODUCTION

Globalization is the way for free flow of goods and services, capital, labour and technology and path for integrating various economies of the World (Datt & Sundaram, 2010). According to Stiglitz, "Globalization is the close integration of the countries and people of the World which has been brought about by enormous reduction in costs of transportation and communication and breaking down of artificial barriers to the flow of goods and services, capital, knowledge and people across borders". (Stiglitz, 2002). India started the process of integrating its economy with the World in early 1990's with the objective to overcome economic crisis and achieve higher growth rate. Iran officially submitted application to join WTO on July 19, 1996 which was approved by its members on May 26, 2005 (Fathipour, G., & Ghahremanlou., A. 2014). After the wave of Globalization and reforms by developing countries, World trade increased rapidly from early 1990's. The developing countries tried to achieve maximum benefit from trade liberalization and increased trade with developed countries. Like many countries, India and Iran also tried to increase their trade with developed

countries and benefit from their improved technology and way of production. About India-Iran trade (**Azar, M., 1999**) said though industrial countries were major trade partners of both these countries. Iran in the post-revolutionary period tried to improve its trade relations with India and other developing countries to reduce dependence on Western countries. In the process to increase trade and solve problems related to trade Joint Commission was formed in 1983. In the 18th session of the meeting held in Dec. 2015 in New Delhi External Ministry of India (EAM) underlined the efforts underway to enhance bilateral economic cooperation in trade and commerce, energy and infrastructure – including railways, ports and shipping and Indian participation in Chabahar port which will facilitate link with Central Asia and Afghanistan (**Ministry of External Affairs**).

After the reforms in early 90's by India, its demand for oil requirements increased rapidly. As Iran has vast reserves of oil as it ranks third in oil exports and fourth in oil production and enjoys good relations with India, there is vast opportunity for both countries to improve trade relations. If India wants to diversify its import of oil basket, Iran is a natural choice for it (**Joshio, R. M., 2015**). In the present times both countries are great powers in their respective regions. Whereas Iran has vast reserves of oil, India is emerging as a great economic and political power in the South Asia (**Soltaninejad, M., 2017**). In 2003, India and Iran signed Delhi Declaration which has improved their strategic and economic partnership. Both the countries need to cooperate with each other for many reasons including India's increasing oil requirements and Iran's attempt to end isolation due to its nuclear program. However, during the last three decades many events occurred that have negatively affected bilateral economic and trade relations between the two countries. These events include Iran's conflict with West, India's vote in IAEA in Sep. 2005 and again in Feb. 2006 against Iran, US and UN sanctions, and Indian ban on export of nuclear related technology, equipment and material have contributed to fluctuation of trade over the years (**Purushothaman, U, 2012**). Moreover, due to sanctions, international banking channels have become non-existent which have also affected trade adversely (**Export-Import Bank of India, 2015**). Iran and India have long history of trade and socio-cultural relationship from ancient times. However, in the present changing economic and political situation in the World, importance of these two countries for each other has increased. While India can provide market for oil reserves of Iran given the sanction of US and West on it, latter can provide easy and safe access to Central Asia and Afghanistan (**Wani, S., Shah, I. 2018**). In recent years there have been positive developments in India-Iran relationship due to bold policy

initiatives by PM Narendra Modi. However, these initiatives should be analyzed through close examination of geo-economics and geopolitical framework in the present World and India's foreign policy towards Iran (Ahmed, Z., & Bhatnagar, S., 2018). On May 6, 2015, minister for shipping and road transport visited Teheran and signed Memorandum of Understanding (MOU) worth 195 million for the development of Chabahar port which would help India to get connected to Afghanistan and Central Asia (Behuria, A., Rizvi, M., 2015). By using threshold autoregressive model, Wani, S. et.al 2019 shows that India and Iran bilateral trade get adversely affected by sanctions on Iran by West and US and both countries should work together to minimize this impact. Many steps were taken by these countries in last couple of years to improve the bilateral trade and economic relationship. A look at share of India's exports to and imports from Iran shows that importance of bilateral trade has increased over the time. Due to rapid growth and increase in demand for energy products imports from Iran has enhanced more rapidly than exports which has led to huge trade deficit of India. Many studies have analyzed trade relation between the two countries as discussed above, but different aspects were area of concern for them. The aim of present study is to provide an overview of trade relation and show how importance of India and Iran in their bilateral trade has increased over the years. As India faces huge trade deficit with Iran which is increasing with every passing year, analyze of comparative advantage would lead to balanced trade based on efficient utilization of resources in the long run. In the next section composition of commodities traded bilaterally is examined. Section third examines comparative advantage of India with respect to Iran followed by summary and conclusion in section four.

COMPOSITION OF TRADE BETWEEN INDIA AND IRAN

Bilateral trade between the India and Iran has increased at a rapid rate particularly in the first decade of the present century. However, trade between the two countries suffered due to Iran's nuclear program and international sanction on it. India's exports to Iran have increased from US\$ 253.3mn in 2001 to US\$ 5433.9mn in 2013 but declined to US\$ 2853mn in 2018. If we look at the trade data from the last two year's trade has again started increasing and we expect that it would further enhance in coming years. Table 1 shows increase in trade during the time period 2001-18 but it is the imports from Iran which has contributed to this increase in trade volume. The trade deficit of India has increased from US\$ 13.67 mn in 2001 to US\$ 11915.1 mn in 2018 which is a matter of concern for policy makers of the country. Though it is the oil imports which is major item imported from

Iran, policy makers need to find goods which can be exported to Iran to minimize this huge trade deficit.

Table 1: India-Iran Total Trade 2001-2018, (US\$ mn)

<i>Item</i>	2001	2007	2013	2018
Exports	253.276	1845.26	5433.901	2853.643
Imports	266.942	9165.577	10031.595	14768.718
Total Trade	520.218	11010.84	15465.5	17622.36
Trade Balance	-13.666	-7320.32	-4597.69	-11915.1

Data source: ITC Geneva and author's calculation.

Table 2 shows India's major export products to Iran. The share of major exports like iron and steel, organic chemicals, coffee, tea, mate & space and organic chemicals have declined from 2001 to 2013 but after that have again started to increase. During the study period, cereals has shown rapid growth and its exports have increased from 0.15% in 2001 to 42.06% in 2018. It is the only item which has shown rapid growth in export basket. It should be noted that in 2006, sanctions were imposed on Iran and India was unable to export many products to it due to international obligations. Another problem which arises due to sanctions was the payment system

Table 2: India's Major Exports to Iran 2001-2018, in (US\$, 000)

<i>All Products</i>	2001	% share	2018	% share
Pharmaceutical products	12944	5.12	61059	2.14
Paper and paperboard; articles of paper pulp, of paper or of paperboard	3417	1.35	61084	2.14
Man-made staple fibres	3199	1.26	81135	2.84
Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals	6661	2.63	86699	3.04
Iron and steel	31396	12.39	92664	3.25
Residues and waste from the food industries; prepared animal fodder	2631	1.04	96972	3.4
Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	13357	5.27	105305	3.7
Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television	16289	6.43	147657	5.17
Coffee, tea, mate and spices	19138	7.56	149075	5.22
Organic chemicals	25364	10.01	156316	5.48
Cereals	392	0.15	1200515	42.07
Articles of iron or steel	10136	4.01	6416	0.22
Meat and edible meat offal	15532	6.13	14463	0.51
Rubber and articles thereof	15074	5.95	35182	1.23

Data source: ITC Geneva and author's calculation.

as the dollar was not supposed to be used in transactions with Iran. In 2015 Iran and p5+1 (permanent members of UN Security council and Germany) signed agreement on nuclear program. Under the agreement Iran agreed to curb its nuclear program in return for lifting of sanctions by international community. However, in 2018 US President Donald Trump withdraw from the said deal and imposed new sanctions on Iran. Five other countries who were part of the agreement stand on terms and conditions of the deal and India being an independent country is free to continue trade with Iran and is not under compulsion to agree with decision of USA.

Table 3 shows composition of goods which India imports from Iran. The imports have increased from US\$ 266.9mn to US\$ 10031mn in 2013 and further to US\$ 14768.71mn in 2018. The composition of goods has undergone a rapid change with a combined share of edible fruits and nuts, peels and citrus fruits, edible vegetables and certain roots and tubers, aluminum and articles thereof and organic chemicals declined from 59.23% in 2001 to 4.29% in 2018. However, the share of mineral fuels, mineral oils, and products of their distillation: bituminous substances: minerals had increased from 12.81% in 2001 to 80.75% in 2013 and further to 90.12% in 2018. This shows that India's demand for mineral fuels has enhanced due rapid growth and development in the country. As Iran supplies mineral fuel to India and other countries and has its vast reserves, there is no need to find the goods in which it enjoys comparative advantage. India faces huge trade deficit with Iran which has increased from US\$ -13.7mn in 2001 to US\$ -4597.69mn in 2013 and further to US\$ - 11,915.05mn in 2018m as Table 1 shows.

**Table 3: India's Import from Iran, Value and Percentage
2001-2018 (US\$, 000)**

<i>All products</i>	<i>2001</i>	<i>2018</i>	<i>% share 2018</i>
Aluminium and articles thereof	36672	1	0.0000068
Edible vegetables and certain roots and tubers	36676	51	0.0003453
Salt; Sulphur; earths and stone; plastering materials, lime and cement	15784	48364	0.33
Edible fruit and nuts; peel of citrus fruit or melons	47784	114545	0.78
Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, ...	30334	262841	1.78
Organic chemicals	36959	518443	3.51
Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral	34196	13309685	90.12

Data source: ITC Geneva and author's calculation.

REVEALED COMPARATIVE ADVANTAGE CONCEPT

In a country comparative advantage arises if it produces and exports a good which is cheaper as compared to other countries. The concept was introduced by David Ricardo (1817) and further developed by Heckscher-Ohlin (1933) Haberler (1936) and others, but it was Balassa (1965, 1977, 1979) who provided quantitative technique to measure it based on relative trade performance of nations. Due to lack of data availability in pre-trade period, actual export data is used to analyze in which commodities a country enjoys advantage with respect to other countries. Many factors like economic structure, trade specialization and change in World demand etc. contribute to change in RCA of a country over the years.

REVEALED COMPARATIVE ADVANTAGE INDEX

The concept of RCA given by Balassa (1965) and applied by Amita, B., & Zeba, K. (2005), Serin, V, & Civan, A. (2008), Maryam, j., & Mittal, A. (2019) is being followed in this study to find comparative advantage of India with respect to Iran. The index calculated is as:

$$RCA_{II} = (X_{kII} / X_{II}) / (X_{kWI} / X_{WI})$$

Where

RCA_{II} = revealed comparative advantage of India with respect to Iran

X_{kII} = exports of commodity k from India to Iran

X_{II} = total exports from India to Iran

X_{kWI} = exports of commodity k from world to Iran

X_{WI} = total world exports to Iran

The RCA index has simple interpretation. If it taken a value for a particular commodity greater than one, the country has comparative advantage in that commodity and vice versa. the RCA shows change in relative factor endowment and productivity of a country, but is not able to differentiate between change in trade policy and improvement in factor endowment. In the study the RCA has been undertaken at sector level using the data from ITC Geneva for the time period 2016-2018. The results are shown in table 4. It is clear from the table that India enjoys comparative advantage in only few sectors in its trade with Iran. In 2016 India enjoys comparative advantage in 15 sectors with respect to Iran with maximum concentration was in made-up textile articles; sets; worn clothing and worn textile articles; rags (HS Code 63), followed by Coffee, tea, mate and spices (HS Code 09), Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad (HS Code 71), Man-made stable fibres (HS

Code 55), inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, (HS Code 28), preparations of vegetables, fruits, nuts or other parts of plants (HS Code 20), cereals (HS Code 10), essential oils and resinoids; perfumery, cosmetic or toilet preparations (HS Code 33), man-made filaments; strips and the like of man-made materials (HS Code 54), glass and glassware (HS Code 70). as shown in the table 4. In 2017 India enjoys comparative advantage in 15 sectors with maximum concentration in made-up textile articles; sets; worn clothing and worn textile articles; rags (HS Code 63), as in 2016. Some sectors like by Coffee, tea, mate and spices (HS Code 09), Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad (HS Code 71), cereals (HS Code 10), essential oils and resinoids; perfumery, cosmetic or toilet preparations (HS Code 33), man-made filaments; strips and the like of man-made materials (HS Code 54), glass and glassware (HS Code 70) as shown in the table 8 have shown improvement as compared to previous year whereas sectors like Man-made stable fibres (HS Code 55), inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, (HS Code 28), preparations of vegetables, fruits, nuts or other parts of plants (HS Code 20), have shown decline in RCA. The number of sectors in which India enjoys comparative advantage has remained same in the study period with sectors showing fluctuation in their respective advantage. Some sectors like made-up textile articles; sets; worn clothing and worn textile articles; rags (HS Code 63), man-made filaments; strips and the like of man-made materials (HS Code 54), glass and glassware (HS Code 70), Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad (HS Code 71), have shown continuous improvement in their comparative advantage as shown in the table 4.

In 2018¹ India enjoys comparative advantage in other made-up textile articles; sets; worn clothing and worn textile articles; rags, (HS Code 63) Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad, (HS Code 71) Coffee, tea, mate and spices (HS Code 09), Glass and glassware (HS Code 70), Cereals (HS Code 10), inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, (HS Code 28), and other sectors as shown in the table 4. The cereals which has shown improvement in its comparative advantage from 3.19 in 2016 to 3.99 in 2018 has contributed to 42.07 % to the export basket of India to Iran in 2018. If we look at the export basket of India to Iran in 2018, Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television, Coffee, tea, mate and spices, organic chemicals and cereals were contributing around 58 % with cereals 42.07% to the export basket of India to Iran. It shows that exports from India are concentrated in

Table 4: Comparative advantage of India with respect to Iran (2016-2018)

Product code	All products	2016	2017	2018
'10	Cereals	3.19	5.1	3.99
'09	Coffee, tea, mate and spices	7.06	8.17	5.68
'28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, ...	4.72	2.39	2.74
'55	Man-made staple fibres	5.21	5.018	2.7
'33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations	2.04	4.24	2.69
'54	Man-made filaments; strip and the like of man-made textile materials	0.67	1.7	2.42
'70	Glass and glassware	0.14	0.74	4.27
'63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	18.15	30.09	164.13
'20	Preparations of vegetables, fruit, nuts or other parts of plants	3.53	3.33	2.97
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	5.99	10.17	35.54

Source: author's calculation based on data from ITC Geneva

few product categories which is mainly primary products and can only fetch low price. However, looking at export basket and goods in which India enjoys comparative advantage in 2018, it is clear that India is not trading with Iran according to comparative advantage of goods. It may be one of the reasons that India's trade deficit has continuously increased over the years.

TRADE INTENSITY INDEX

Trade intensity index is used to measure how intensively the countries are trading with each other. It is defined as share of one country's trade with other country, divided by other country's share of World trade. The index is further divided into export intensity index and import intensity index. This shows the intensity of exports and imports between the countries over the years. The export intensity index between India and Iran is shown as follows.

$$EII_{ij} = \frac{\left[\frac{X_{ij}}{X_i} \right]}{\left[\frac{M_j}{M_w - M_i} \right]}$$

EII_{ij} = export intensity index of country i with country j.

X_{ij} = exports of country i to trade partner j.

X_i = total exports of country i.

M_j = total imports of country j.

M_w = total world imports.

M_i = total imports of country i.

I, j, W = India, Iran and World.

Import Intensity Index:

$$III_{ij} = \frac{\left[\frac{M_{ij}}{M_i} \right]}{\left[\frac{X_j}{X_w - X_i} \right]}$$

III_{ij} = import intensity index of country i with country j.

M_{ij} = imports of country i from trade partner j.

M_i = total imports of country i.

X_j = total exports of country j.

X_w = total world exports.

X_i = total exports of country i.

I, j, W= India, Iran and World.

Table 5 shows the results of export and import intensity of both India and Iran. These indexes were calculated for time period 2001-18. The results show that Iran's export intensity has remained low around 1, whereas other indicators show that trade intensity between the two countries has increased over the years.

Table 5: Export and Import Intensity Indices of India and Iran (2001-18)

Year	XII India with Iran	MII India with IRAN	XII Iran with India	III Iran with India
2001	2.22	1.34	0.93	4.04
2002	3.16	1.11	0.72	3.21
2003	4.47	0.81	0.81	4.64
2004	4.39	0.72	0.98	4.11
2005	2.89	0.78	0.81	2.67

contd. table 5

<i>Year</i>	<i>XII India with Iran</i>	<i>MII India with IRAN</i>	<i>XII Iran with India</i>	<i>III Iran with India</i>
2006	3.96	6.21	0.97	3.61
2007	3.62	6.86	0.64	2.83
2008	3.68	6.43	0.55	2.84
2009	2.48	6.23	0.76	2.26
2010	3.05	4.33	0.73	1.55
2011	2.53	3.21	0.79	1.22
2012	3.11	3.72	0.74	2.51
2013	6.13	4.33	1.07	4.96
2014	4.89	5.03	1.15	4.28
2015	4.76	4.28	1.75	3.54
2016	3.41	4.61	1.61	2.77
2017	2.95	4.68	1.19	2.57
2018	4.11	5.71	0.81	3.81

SUGGESTIONS AND CONCLUSION

In the present day World, it is the economic interests of nations that becomes the base for formulating foreign and domestic policy. India and Iran have increased their mutual cooperation from early 1990's due to changing economic and security situation in the region. However, it was Delhi declaration of 2003 which provide the way for increasing cooperation in many areas including economic and trade cooperation. As is shown in Table 1 from 2001-2017, the share of exports and imports with Iran have increased almost doubled. It shows that the two countries have given importance to each other in formulating their trade and foreign policies. Given the importance of both countries in their respective region and prevailing economic and trade situation in the present world, both countries need to further increase their economic cooperation. Iran's nuclear program and its relation with west is one of the reason for slow growth of trade between the two countries. India need to formulate policy with respect to Iran in such a way so that its relation with rest of World doesn't get affected adversely. Moreover, if feasible two countries with mutual understanding should adopt a currency (like Indian rupee, Chinese Yuen) in their bilateral trade so that increase in conflict of Iran with the West doesn't negatively impact bilateral trade between the two countries. Trade intensity shows that both export and import intensity has increased over the years and there is scope for further enhancement of bilateral trade. Looking at the composition of goods traded between the two countries, it is clear that narrow basket of goods is being traded. In the study period basket of goods traded between the two countries was heavily concentrated in few products. Both India and Iran need to diversify basket of goods exported and imported to each

other. India exports narrow range of products which may be the reason for huge trade deficit, whereas Iran mainly export mineral fuel (90% in 2018) to India which is not a healthy sign for long run economic and trade cooperation. India enjoys comparative advantage in many product sectors which are either not part of export basket or have minimal share. India should formulate trade policy in such a way so that product sectors which enjoy comparative advantage make significant contribution to export basket to Iran.

Note

1. See Appendix A.3 for detail.

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